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ABSTRACT

The Edison Project provides the design for a new kind of school, one that keeps pace with the social and technological changes children will encounter. The Edison school design, which is highly ambitious and encourages fundamental change in schools, proposes a rich and challenging curriculum for all students; a professional environment for teachers; more effective use of time by students, teachers, and administrators; technology for an information age; and careful assessment that provides real accountability. At the heart of the Edison school design are world-class standards that set forth what students should know and be able to do in order to be active, contributing participants in the world. The standards communicate high expectations to students, teachers, and parents, and bring coherence to the overall school design. They also serve as the basis for curriculum, instruction, and assessment. This book describes the standards for one of the six academies which make up the Edison school design, the Primary Academy, which serves children in kindergarten through grade two. The standards described respect children's intellectual, social, and developmental needs, and are organized into the following five parts: (1) humanities and the arts; (2) mathematics and science; (3) character and ethics; (4) physical fitness and health; and (5) practical arts and skills. The standards are illustrated with descriptions of the approach to each area; examples of classroom projects and activities; outstanding books, performances, and other materials; and ongoing assessment activities through which students demonstrate their growing knowledge and skills. (TJQ)

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Primary Academy

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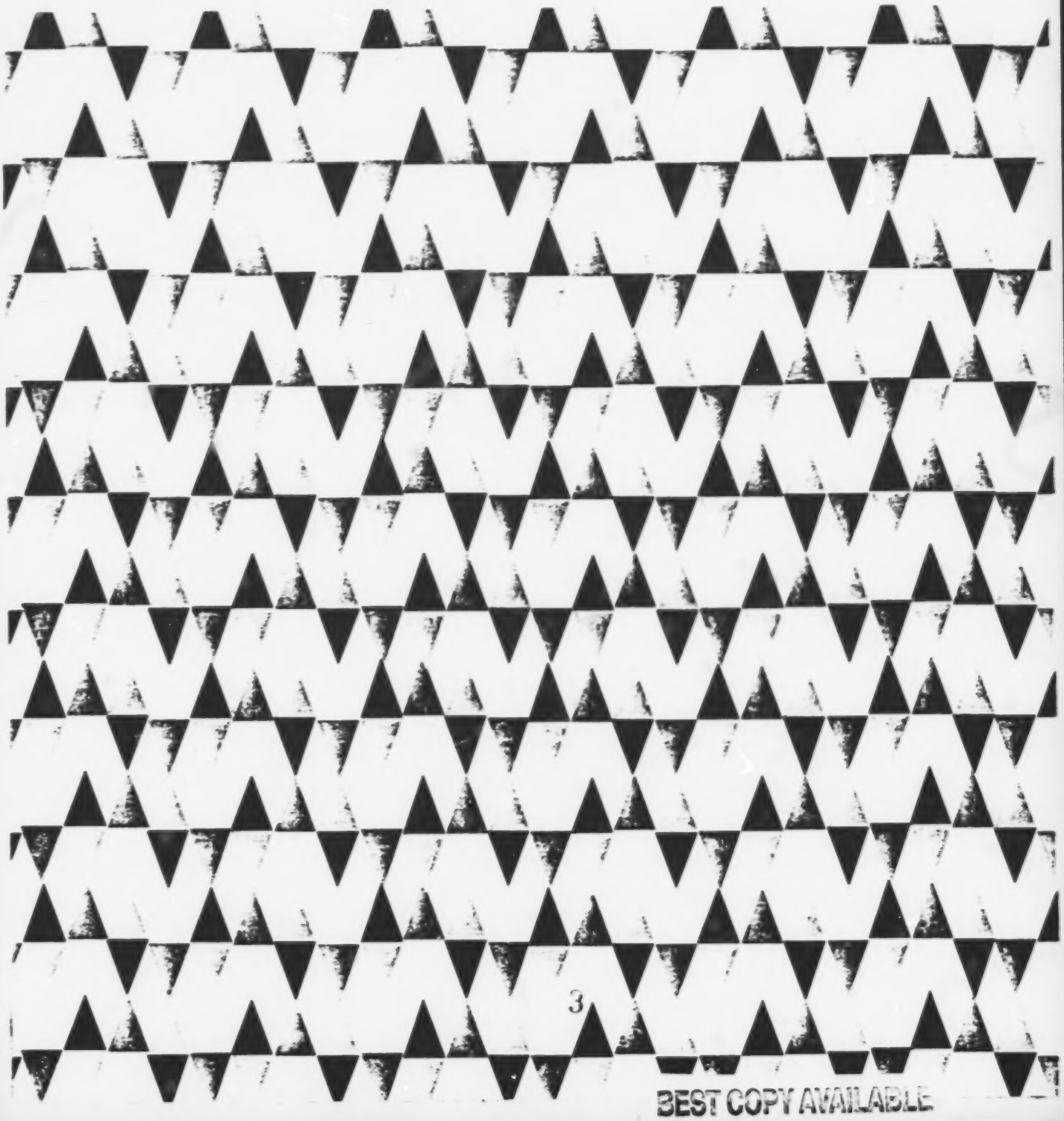

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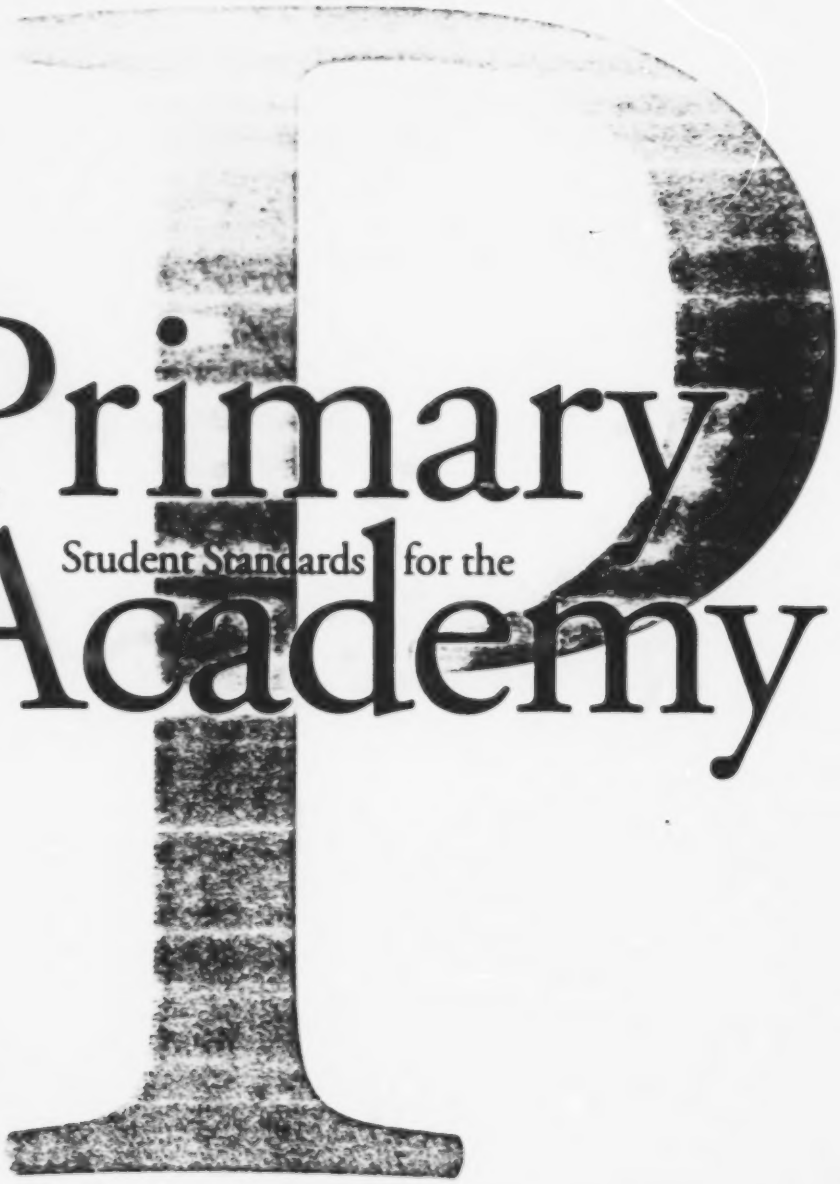


Primary Academy

Student Standards for the

Introducing The Edison Project

Learning in the Age of Choice

A Place to Grow

Humanities and the Arts

Language Arts

History, Geography, Civics, and Economics

The Arts

Mathematics and Science

Character and Ethics

Physical Fitness and Health

Practical Arts and Skills

Ensuring Student Success

Acknowledgments

Introducing

The Edison Project

The Edison Project provides the design for a new kind of school, one that keeps pace with the social and technological changes our children will encounter. Public school partnerships will make this design a reality for pioneering school systems throughout the United States.

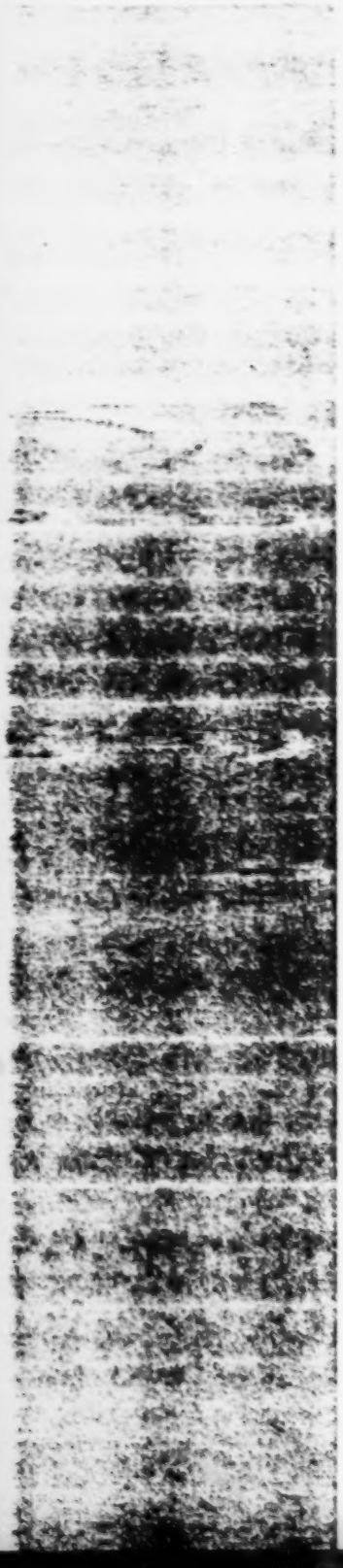
The Edison school design is highly ambitious, encouraging fundamental change in schools. We propose a rich and challenging curriculum for all students; a professional environment for teachers; more effective use of time by students, teachers, and administrators; technology for an information age; and careful assessment that provides real accountability.

At the heart of our school design are world-class standards that set forth what students should know and be able to do in order to be active, contributing participants in the world. These standards communicate high expectations to students, teachers, and parents. The student standards also bring coherence to the overall school design and serve as the basis for curriculum, instruction, and assessment.

Curriculum Support

The Edison Project, in concert with its public school partners, is developing a wealth of curriculum materials. Chief among these are computer-based, interactive frameworks that contain outlines of every subject area; strategies for integrating content across subject areas; model lessons; and instructional resources. Teachers access, add to, and adapt the frameworks via the computer. This networked system allows teachers to share curriculum and instructional materials with colleagues across the country. The Edison Project also supplies teachers with a wide variety of print-based instructional materials.

Many great works of art and intellect, such as *Aesop's Fables* and Bach's *Well-Tempered Clavier*, were originally intended for instructional purposes. All Edison teaching materials, both print- and computer-based, are consistent with our view of the "well-tempered" curriculum—one that will endure as a work of art.



Structural Support

Each school is divided into six academies. The Readiness Academy serves three- and four-year-olds; the Primary Academy is for children in kindergarten through grade 2; and the Elementary Academy is for grades 3-5. The Junior Academy serves grades 6-8; the Senior Academy, grades 9 and 10; and the Collegiate Academy, grades 11 and 12. This unique structure allows students to achieve the standards for each academy at their own rate. Because students work with the same teachers over an extended period of time, they progress at a pace that ensures their confidence and competence.

About This Book

The standards in this publication describe the knowledge and skills students will have when they complete the Primary Academy. These standards, along with the standards for all the academies, ensure that students leave school with more than a piece of paper. They graduate with powerful academic, artistic, ethical, and practical tools for living productive lives.

The standards for the Primary Academy respect children's intellectual, social, and developmental needs, and are organized in five parts: humanities and the arts, mathematics and science, character and ethics, physical fitness and health, and practical arts and skills. These areas are vital to the development of the total child. Descriptions of our approach to each area; examples of classroom projects and activities; outstanding books, performances, and other materials; and ongoing assessment activities through which students demonstrate their growing knowledge and skills illustrate the standards.

The standards and accompanying activities, resources, and assessments combine to paint a vivid picture of life in an Edison school. We hope you'll come away from this publication with a clear understanding of how students can be motivated to achieve by the challenge of high standards.

Learning
Age of Literacy

For the children in the Primary Academy, this is the Age of Literacy. They are beginning to read and write, to acquire significant information, to understand and know more about the world, and to emerge as active learners and eager explorers. At the same time, they are acquiring the tools and skills they will need on the path toward lifelong learning.

Literacy includes reading, writing, and speaking. It means being familiar and comfortable with the humanities and the arts, mathematics and science, character and ethics, practical arts and skills, and physical fitness and health. Being literate involves both knowing facts and possessing the habits of mind required to recognize and analyze patterns and relationships.

Children in the Primary Academy find a supportive climate for their developing literacies. They learn in a variety of settings—from whole-class instruction to independent study, cooperative-learning groups, or one-on-one tutoring. Whatever the setting, children are active and engaged.

A look inside a primary classroom provides a vivid portrait of how literacies can develop in a meaningful environment. Several students are carefully scripting and illustrating

labels for plants in their garden. Another group of students is industriously weighing, measuring, and charting comparative sizes and shapes of vegetables. A third group is practicing a choral reading of Ruth Krauss's *The Carrot Seed.*

And where are the four teachers assigned to this house? Mrs. Schultz is out in the garden, guiding a group of students as they note and record the growth process and progress of their plants. They will add this information to the charts and data they are maintaining electronically.

Mr. Roberts is "planting" a row of blocks as he models a math experience. "Imagine," he explains, "that the long green blocks are heads of lettuce and the short white blocks are spaces in between the plants. How many green blocks do you think we will need to plant for a row that stretches from one side of our room to the other?" Mr. Roberts writes the children's estimates on the board before they work together to find the actual answer.

Ms. Allen is meeting with two parents who are helping to schedule and organize field trips for the market program. Each fall, the Primary Academy runs a market for the entire campus for a week. Students sell some of their harvested vegetables and flowers, along with paintings, crafts, and other class-created goods. To prepare for their own market, they will visit a variety of markets in their school neighborhood.

By the time they leave the Primary Academy, children are beginning to shift their focus from learning to read to reading to learn.

Across the hall in another classroom, Mr. LaValliere, the tutor, is helping a child make a book about objects related to the garden that start with the letter *b.* At the same time, on the other side of the room, Mrs. Staub offers direct instruction in identifying character traits as part of the reading curriculum. Five students are listing descriptive adjectives with marking pens inside a large butcher paper silhouette of Beverly Cleary's *Ramona the Pest.* This group is trying not to distract the audience gathered around a student who sits in the "author's chair," in another part of the room. She is sharing a book she has written, illustrated, and bound, using the resources in the publishing center.

These classrooms are alive with activity and movement. Yet each purposeful activity is carefully orchestrated to engage students' heads, hands, and hearts. This is quality teaching and learning in action.

By the time they leave the Primary Academy, children are beginning to shift their focus from learning to read to reading to learn. Whether they are acquiring literacy about language or literacy about the disciplines, children engage in the process of making meaning. As makers of meaning, they develop interpretations, explanations, analyses, and artistic renditions. Their newly acquired literacies prepare them for the next level of education and connect them to the world in profound ways.

A Place to Grow

Every Primary Academy maintains a garden—in pots or in plots, depending on location. The garden is both the children's contribution to their school community and an apt metaphor to describe how they learn and grow during this special time in their lives. Just as the garden provides fertile soil for growing plants, the Primary Academy supports the intellectual, social, and physical growth of young children.

The design for the Primary Academy is based on reliable research and on the practice of successful educators. The curriculum is organized so that by the time they complete this academy and move on to the next, students have grasped the following "big ideas":

COMMUNICATION (reading, writing, speaking, listening, and viewing) is key to understanding and participating in the world.
BEING human means being part of a society and having rights and responsibilities: it also means being responsible for oneself.
KNOWLEDGE leads to an understanding of how the world works.
USING the mind and body well is important to living a productive and happy life.

The Distinctive Characteristics of the Primary Academy include:

A Student-Centered [illegible]. Teachers see that the transition from home, preschool, or a Readiness Academy is seamless. Children stay in the Primary Academy with the same team of four teachers for three years, allowing each child time to meet our high expectations for all students. This practice also eliminates the disruption of having a new teacher each year and provides children with needed continuity and support throughout the program.

We provide a learning environment that engages children and matches their interests. We also allow for individual differences. Indeed, the very structure of the academy is attentive to each child's unique character and capabilities. Students who need extra help receive additional assistance from teachers and tutors. At the direction of the teachers, carefully selected college graduates tutor children individually and in small groups so that everyone gets a great start during these critical years. When students reach the standards for this academy, they move on to the next set.

Close Involvement With Family. Family and teachers forge a close partnership in order to support the children. They meet frequently to discuss the children's progress and to share materials and ideas. Families have access to a wealth of print and electronic materials, so they can reinforce at home what their children are learning in school. They may also use the home computer that The Edison Project provides for each family to pursue their own educational objectives, such as learning a new language. Families also participate actively in the life of the school as volunteers.

The primary years are well suited to learning about the human life cycle. What better way to demonstrate this than through regular contact with people of all ages? Teachers welcome the grandparents of children in the academy and other "grand friends" from the community. In addition, children plant and grow their garden with help from senior citizens.

A Community of Literacy Children in the Primary Academy acquire the literacy skills necessary to read and write, to understand how the world works, and to develop responsible behavior. In order to carry out this ambitious and balanced program, teachers have a strong background in the content areas.

We make sure that by the time they leave this academy, children have the reading and writing skills necessary to their success in the Elementary Academy. Equally important, we create a literate environment that encourages students to see reading and writing as valued, attainable, useful, and fun.

We focus on mathematics, science, and other subjects so that children acquire a deeper sense of how the world works. We teach math in a way that fosters understanding of important concepts, and science is more than just an add-on.

Children develop ethical literacy by following the positive examples of teachers and other children, by reading and writing about topics such as sharing, and by practicing behaviors such as playing fair.

> The very structure of the academy is attentive to each child's unique character and capabilities.

We further support developing literacies through a special program called the Greats. This program systematically introduces children to the great works, performances, knowledge, ideas, lives, and problems that have shaped our world, have endured through the ages, and are emerging today. Regular exposure to the Greats makes school vivid and fascinating, and provides a common core of knowledge shared by all students.

We use direct instruction and other effective strategies in all academies. Project-based learning is one of our main strategies. Students take more responsibility for their work and are more motivated because their projects are connected to the real world and provide them with the opportunities to use their newly acquired knowledge and skills. These projects also provide a mechanism for integrating all the subject areas childen are learning about.

Each quarter, for one to three weeks, the school suspends its usual schedule for students to participate in special projects, called "intensives." Intensive projects allow students and teachers an unstructured time and arena for grappling with larger problems or areas of interest. They provide yet another opportunity for students to apply knowledge and skills to sophisticated problems.

Projects may involve an entire class, a cooperative-learning team, or a single student. Project work helps children acquire important knowledge and skills while learning to work well independently and together.

An Integrated Curriculum. Student standards for the Primary Academy are listed according to the accepted divisions in the curriculum—language arts, mathematics, history, the fine arts, and so on—in order to account for the full range of knowledge and skills that children acquire. In practice, however, we frequently integrate the subject areas.

Integrated experiences help children comprehend the "big ideas" previously listed. In fact, we aim all teaching and learning activities toward the goal of developing children intellectually, socially, and physically so that they can take full advantage of school.

In this academy, children begin to notice connections among subjects and to use several disciplines to solve a problem or complete a project. For example, they may chart the growth of their plants and make a graph of which ones grow fastest, measure the plants using a variety of tools, describe cause-and-effect relationships to explain how gardens grow, read and write about the garden, sing songs and paint pictures with a garden theme, document plant growth with still photographs, and produce a video on how the garden grew.

Flexible Groupings. Teachers group students in the manner that is best suited to the tasks at hand. These flexible groupings allow children to reap the benefits of learning under optimum conditions.

Students generally work on language and mathematics activities in same-age groups. These groups may be divided into smaller groups, based on the same needs, for brief periods of time. The groups are not rigid and are reorganized frequently. And students use their reading and mathematics skills in integrated projects and activities, not just at "reading time" or "math time."

Children frequently carry out projects and participate in other subjects in multiage groups. They benefit from social interaction with older and younger children and learn from one another, too. They also may work in same-age or multiage cooperative-learning groups, in which all the participants work toward a common goal. Each child is responsible for making a specific individual contribution to the group, and teachers observe and evaluate this work.

Finally, the students work individually on independent projects, and one-on-one with teachers and tutors. They also may decide, or the teacher may suggest, a quiet time for reading, thinking, and resting in a special place designated for "time out."

Special Spaces for Learning. Teachers and children have access to attractive, well-stocked, and well-organized classrooms. A special place in the academy, called the Collaboratory, contains a wealth of instructional resources. Children have ready access to the materials used by professional artists (paints, easels, oils), authors (computers, bookbinding materials), and builders (hammers, nails). The Collaboratory also contains a tinkerer's table with objects for taking apart or putting together, so that children learn how things work. Media carts containing state-of-the-art technology for designing and making multimedia presentations are available as well.

Children use a variety of new technologies extensively at school and at home. After they learn certain computer basics, the children have personal computers installed in their homes. They use these important electronic tools to read, write, collaborate, explore, network, and more. Primary students use technology to write letters and notes, to make books, to E-mail messages and assignments, to play games, to watch videos, to record data, to scan objects, to make graphs, to take pictures, and to produce documentaries, art, and other exhibitions.

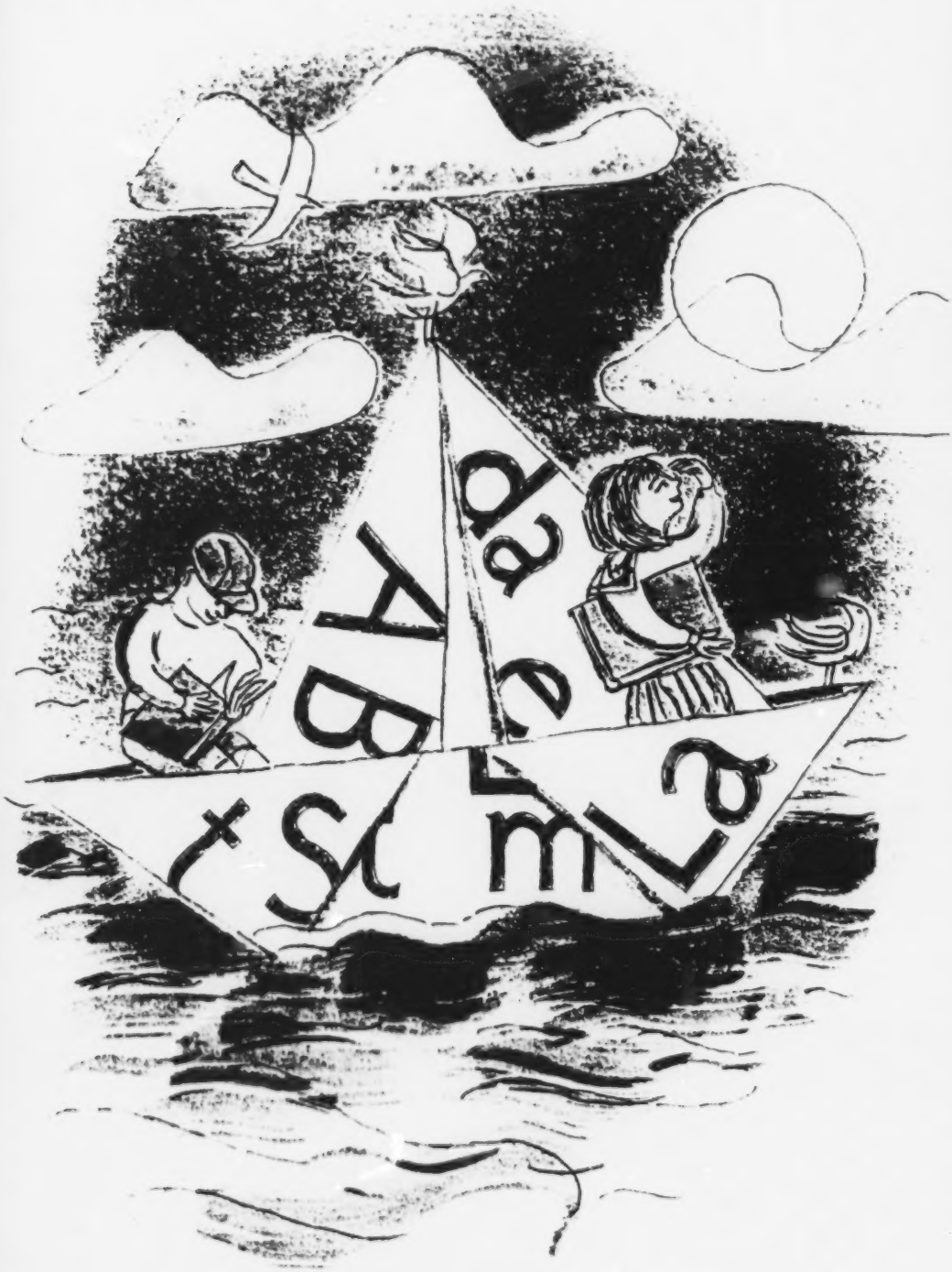
Elements of Surprise. So that school does not become predictable, teachers often organize unannounced special events. Children see that the real world is filled with unplanned happenings and they delight in the element of surprise. When the teacher provides a prompt like, "It is thirteen o'clock," the children know to expect the unexpected.

Students are regularly assessed on how well they are achieving the standards for their academy. Teachers use a variety of techniques, including open-ended items and enhanced multiple-choice questions that frequently are embedded in the curriculum. Some of these assessments are for specific subject areas, and some integrate various subjects, asking children to apply knowledge and skills from several disciplines to solve a problem.

> Ongoing assessments provide clear and useful information regarding each student's academic progress.

These ongoing assessments provide teachers, students, and parents with clear and useful information regarding each student's academic progress. Student progress is reported on the Quarterly Learning Contract (QLC), an essential tool at each school. The QLC is the formal expression of an individualized set of expectations and obligations entered into by the school, the student, and parents. Teachers use this system to monitor progress and to prevent students from falling irretrievably behind. Throughout the course of each academy and at its end, assessments certify that students have met the required standards and are ready for new challenges.

Teachers record children's progress in two formats: a large portfolio containing the child's work and copies of the Quarterly Learning Contracts with teachers' observations; and an electronic portfolio, which is a floppy disk kept by the teachers and shared with parents. Teachers, parents, and the children themselves can see how they have grown.



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Standards for Language Arts

IN READING, STUDENTS WILL BE ABLE TO:

READ a variety of self-selected and assigned books and expository texts from the primary reading list with fluency, independence, and accuracy

IDENTIFY the value and purposes of reading for their own lives

RELATE and apply content to their own experiences

COMPREHEND literary works or expository texts

IDENTIFY and react to key ideas, issues, and concepts, heard or read, by talking, writing, dramatizing, or creating art in response to the text

MAKE and validate predictions, determine purposes for reading, self-question while reading, and draw conclusions based on text

INCREASE vocabulary understanding and usage by maintaining an ever-expanding collection of meaningful words

SELECT materials that are appropriate for ability, interests, and conceptual level

READ aloud with expression from appropriate materials

READ silently with comprehension from appropriate materials for increasing periods of time

DEVELOP a variety of strategies to figure out unfamiliar words and ideas in print, such as phonetic and structural analysis or visual and semantic cuing

RECOGNIZE and compare unique elements and devices of literary works—plot, characters, setting, problem and solution; rhyme, rhythm, and predictability; alliteration, figurative language, and humor

RECOGNIZE and read a variety of genres, including fiction (stories, poems, plays) and expository text (newspapers, magazines, and reference materials)

SELECT appropriate reference sources to find information, answers, and word meanings

CHOOSE to read on their own and share their reading enjoyment with others

In the Primary Academy, we take advantage of the golden age of literacy learning by ensuring that students develop competence and confidence in their reading ability, read widely for a variety of purposes, and become makers of meaning. We accomplish this by immersing children in a language-rich environment that is filled with print and electronic books and by teaching with the most effective practices and materials available.

Reading

Our program for these emerging readers and writers fosters a love of reading and the motivation to read for pleasure and information while providing direct instruction in the mastery of basic decoding (phonetic and structural analysis, visual and semantic cuing) and comprehension (predicting, questioning, drawing conclusions) skills and strategies. Recognizing that basic skills provide the foundation for children during these critical learning-to-read years, teachers focus on presenting instruction in the context of reading real literature. Skills, such as letter and sound recognition, are introduced and strengthened as students read, read, and read some more.

Just as the payoff for studying how to play the piano comes when children use the tools—recognizing how notes on the staff correspond to keys on the keyboard, practicing

ELECTRONIC BOOKS
Arthur's Teacher Trouble
by Marc Brown
Just Gramma and Me
by Mercer Mayer
Wiggleworks and *Scholastic's Beginning Literacy System*
(Scholastic)

Periodicals

Highlights for Children
Jack & Jill
Ranger Rick
Scholastic News
Stone Soup, The Magazine By Children

BOOKS FOR VIEWING AND LISTENING
Anansi, narrated by Denzel Washington, music by UB40
Jack and the Beanstalk, narrated by Michael Palin
King Midas, narrated by Michael Caine
Madeline by Ludwig Bemelmans, narrated by Christopher Plummer
The Tiger and the Brahmin, narrated by Ben Kingsley

scales, and interpreting time signatures—to play actual piano pieces, so it is with reading instruction in the Primary Academy. Children learn how to put their meaning-making tools to work immediately in interesting and appealing reading materials.

As they encounter narrative and expository text, children learn the skills, strategies, and techniques used by all good readers. For example, good readers ask questions as they read. These questions guide their approach to the text and provide the motivation for reading further. In contrast to early reading programs that interrupt the story's flow to interrogate children after brief passages, we encourage them to generate their own questions. These questions then become an important part of the daily conversation between and among students and teachers. Students learn to formulate sensible questions as well as to respond with increasing levels of thought.

In a Primary Academy classroom, all sizes, shapes, and kinds of print material are displayed and easily accessible—real-world print, such as telephone books, menus, and game directions; the Greats, enduring works of classic and contemporary children's literature; reference materials such as atlases, encyclopedias, and dictionaries in both print and electronic formats; student-created materials, printed and bound with the help of parent volunteers in the publishing center; charts, graphs, and brainstormed lists of student-generated "favorites" (favorite foods, books, animals, sports); and colorful big books with predictable rhymes and stories. In addition, interesting sayings and adages are displayed around the room.

This literate environment provides the setting for students to acquire and use an extensive vocabulary drawn from the materials they read. Students begin personal collections of meaningful words, which they maintain electronically. They can then draw from their word collections for writing and classifying activities.

The Primary Academy models the behaviors of real readers, even welcoming young students each morning with a daily newspaper and cup of juice. From that

moment on, students are actively engaged in exploring, sharing, and creating print. Selections that students have heard read aloud or have read themselves from the core reading list in the Greats form the basis for dramatization, discussion, journal writing, and art projects. Materials organized in topics such as The Way Things Work, Myths and Legends, Stories and Tales from Around the World, and Animals in Fact and Fiction stretch young minds and whet the appetite for research and additional reading. Jingles, poems, and song lyrics provide rhythmic, rhyming, and repetitious content that come so naturally to children of this age.

Classrooms are carefully structured to facilitate reading achievement. We teach reading to all students of the same age group at the same time, and we establish, through diagnosis and observational checklists, groups of students working at the same level for several days each week. We avoid tracking by continuously changing the groups. This flexible arrangement allows for more targeted teaching. Children receive substantial direct instruction and one-on-one tutoring from teachers, tutors, and peers. We also use cooperative-learning groups; for example, children work together to discuss stories they have read, to plan and develop literature projects, and to reinforce skills in meaningful activities.

The Edison Project provides each child with a personal home computer. Students therefore have the opportunity to practice basic skills by writing stories, sending E-mail, and interacting with some of the highly effective computer-based reading programs available for school and home. In fact, we suspect that many children will choose to spend their free time at the computer instead of in front of the television.

Computers also bring new meaning to the terms "lap reading" and "laptop." It is well established that children who are regularly read to grow up to be readers. They receive this kind of attention in the classroom from computers that are equipped to run electronic storybooks. And, when a student wants to hear a favorite story over and over again, the computer always has the time!

Of course, computers are no substitute for the human touch. We also provide numerous books for family members to read aloud at home. And we hope that children will be so enthusiastic about their developing reading skills that they'll want to read at home, too—often under the covers with a flashlight!

Reading is not an isolated subject in the primary program; students use reading

in all subjects and experience reading as a worthwhile leisure activity. In this academy, students develop the reading skills and habits that will last a lifetime.

Reading

FOSTERS a love of reading
MOTIVATES students to read for pleasure and for information
IS FILLED with print and electronic books
EMPHASIZES skills in the context of reading
TEACHES the strategies that good readers use
FEATURES great works of classic and contemporary literature
VALUES reference materials and periodicals
USES technology to teach reading
PROMOTES vocabulary development

Speaking, Listening, and Viewing

IN SPEAKING, LISTENING, AND VIEWING, STUDENTS WILL BE ABLE TO:

GIVE and receive directions and communicate simple messages
MEMORIZE and recite with expression a poem or speech of at least ten lines
SPEAK extemporaneously on a familiar subject for at least two minutes with coherence and liveliness
LISTEN to a book being read that is on the reading list for the next academy and demonstrate understanding of it by retelling the significant elements
SUMMARIZE a news report, movie, or television program orally and in writing
EXPLAIN the difference between factual and fictional video programming
DISTINGUISH between programming and commercials

Speaking, listening, and viewing have a significant place in the curriculum, just as they do in the real world, especially the world of work. Our standards for this area reflect today's environment, in which information comes from a variety of media sources, especially video communications.

Students in partnership schools develop these important communications tools in a variety of ways. They report on the books they read, summarize news events, describe facts and concepts learned in all subject areas, and contribute to cooperative-learning groups as speakers and listeners. We also encourage children to practice their speaking, listening, and viewing skills at home, providing another opportunity for families to participate in the life of the school.

Speaking

Students in this academy learn to speak clearly and with confidence. We expect them to speak extemporaneously on a variety of subjects, just as students in the Senior and Collegiate academies do, at a level beyond the usual "show and tell" presentations. They learn to organize their presentations and to tailor their remarks to their audience, which might include parents and

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younger or older students. Children observe the connection between speaking and writing and use both to demonstrate their understanding of the curriculum.

Storytelling and the oral tradition also play featured roles. Today's children experience the equivalent of storytelling through television and movies. Their comfort with oral tradition via these media provides an opportunity to develop more sophisticated appreciations for the art of storytelling and for the rich oral traditions of many diverse cultures. Experienced storytellers are frequent visitors to partnership schools. Students often retell favorite myths, legends, and stories for their classmates, using the expression, presentation, and intonation of professionals. And parents, grandparents, and other family members frequently try their own hands at telling stories in class and passing on the oral tradition.

Children learn to listen with discrimination. Effective listening helps them make sense of the vast amount of information that comes to them aurally. In this academy, two of the most important applications of listening skills are comprehending classmates' oral reports and listening to stories. Children grasp the connection between reading and listening and learn to do both with understanding.

A very important life skill—giving and receiving feedback—starts to develop at this level. Students practice their listening skills as they provide constructive suggestions to other speakers. Moreover, listening thoughtfully and attentively helps them put the feedback they receive to good use.

Visual literacy is increasingly important in today's video world. Yet few people watch video actively and selectively. Most of the information children have about today's world comes to them from the screen. In this academy, children learn to question what they watch, just as they question what they read. They also learn to distinguish among types of programming they have seen or will see when viewing television at home, such as the news, situation comedies, and commercials. Outstanding material available in video format can introduce students to people and transport them to places they may not encounter in other ways. In the Primary Academy, they learn to be informed and intelligent viewers.

Speaking, Listening, Viewing

PROMOTES extemporaneous speaking

TEACHES students to give and receive feedback

ENCOURAGES respect and appreciation for storytelling and the oral tradition

DEVELOPS informed, intelligent viewers

HELPS students analyze information from a variety of sources

Standards for Writing

IN WRITING, STUDENTS WILL BE ABLE TO:

WRITE journal entries, stories, letters, and poems with clarity and correct mechanics

WRITE a detailed description of a familiar person, place, or object

WRITE a simple report of at least two pages on a subject of special interest

REVISE a piece of writing by improving sequence, providing more descriptive detail, or adding more variety of sentence types

OFFER editorial suggestions to classmates

SPELL frequently used words correctly

USE capitals, appropriate punctuation at the end of a sentence, commas in a series of words, and correct verb tenses and plurals

READING MATERIALS

About Writers

Laura Ingalls Wilder by Gwenda Blair
Country Artist: A Story About Beatrix Potter by David R. Collins
Langston Hughes, American Poet by Alice Walker

Writing is an essential means of communication, and primary students learn to express themselves in ways that are both compelling and correct. Like reading, we teach writing in all subject areas, and students learn to write for many purposes and audiences. Children start to see writing as a tool for understanding all of the curriculum. During their first attempts at writing, we encourage them to get their thoughts down on paper or on the screen, using invented spelling whenever they need to. As they become more fluent in writing, students work on correct spelling and grammar.

At this stage, children are actively engaged in the writing process. We emphasize learning to review one's work and revise a piece of writing. Students also learn to give feedback on classmates' writing. They practice incorporating these editorial suggestions and start to review and rewrite their own work with the careful eyes of an editor.

Children participate in real-world writing activities, such as preparing book and movie reviews to be distributed throughout the partnership school system. They frequently write and E-mail messages at home and at school. When writing, students use their personal word collections as dictionaries. The primary classroom resembles a newsroom in some respects, with students collecting and communicating information in a variety of ways.

We also emphasize creative writing. Children regularly write stories, jokes, riddles, plays, and poems, and publish them in class or school literary anthologies. The Collaboratory contains a publishing center stocked with diverse materials for making and binding all types of books.

Primary students begin to keep written journals, which they maintain in notebooks or on the computer throughout their school experience. These journals may contain their thoughts about things they are learning or descriptions of significant events going on in the world around them.

Students generally use the computer's word processing capabilities for their writing and are as comfortable with computers as they are with pencils. They send and receive messages by E-mail and use the new technologies effectively and efficiently.

Writing

ENCOURAGES real writing for real purposes

PROMOTES correct spelling and usage

DEVELOPS basic editorial skills

TEACHES students to give and receive feedback

COMMUNICATES the power of the written word

Spanish

IN SPANISH, STUDENTS WILL BE ABLE TO:

COUNT to 100 and say the alphabet

RECOGNIZE orally and in writing many of the basic nouns, verbs, and adjectives that they know in English

USE basic conversational phrases, questions, and commands

LISTEN to and read familiar stories

RECOGNIZE the elements that make the Spanish language unique

IDENTIFY cultural similarities and differences among speakers of Spanish and English, here and in other parts of the world

Young children enjoy playing with and exploring languages and generally are not self-conscious about their pronunciation. They frequently engage in simple conversations or sing songs in different languages. In fact, research shows that students who study languages early in their schooling tend to be more fluent over time. The Primary Academy is the optimum time for students to begin the formal study of another language, and all students learn two languages. We chose Spanish as the second language for most students because of the increasing numbers of Spanish speakers in the United States.

Spanish

The Spanish program, which is enhanced by the presence of a foreign-language teacher, emphasizes conversation and culture, and students use their second language in many real-world situations. They have to, because their Spanish classes are conducted entirely in Spanish. From the earliest stages, students are makers of meaning, as they decode their teachers' linguistic and cultural cues. Labels for familiar objects, storybooks, and audiotapes in Spanish are part of the print-rich environment. Students are moving toward the long-term goal of being able to communicate effectively with fluent speakers of Spanish.

Children also learn the Spanish vocabulary for other areas of the curriculum, such as *plantas* (plant) and *familia* (family). They learn about Mexico and other Spanish-speaking parts of the world and come to appreciate the joys of exploring a new culture through its language. As their multicultural understanding grows, children begin to see that Spanish is not just English translated—it is a unique way to think and communicate.

There is general agreement that children should learn more than one language. The Edison approach lays to rest the debate on second languages because all our students learn two languages. Furthermore, all children will have the competence in English that's necessary to meet the student standards. Children for whom Spanish is the primary language maintain their language heritage and expand their language abilities while they learn English. They get support for learning English from the primary tutors and from specialized materials and electronic teaching tools. Children whose primary language is other than English or Spanish also receive special instruction in a setting determined by local needs.

Spanish Second-Language Learning

SUPPORTS students' natural love of languages

EMPHASIZES conversation, culture, and real-world applications

PROMOTES multicultural awareness

INCLUDES special instruction for English as a Second Language students

History, Geography, Civics, and Economics

BEST COPY AVAILABLE

IN HISTORY, STUDENTS WILL BE ABLE TO:

DISCUSS stories, legends, and fables from a variety of historical and cultural sources

CONSTRUCT a time line from the 1920s to the 1990s showing historical figures from stories they have read

IDENTIFY key historical figures and their contributions

PREPARE an oral history of someone who has lived in the time that is being studied

RETELL a story about an historical figure in chronological order

SUMMARIZE a simple news story with attention to time

IN GEOGRAPHY, STUDENTS WILL BE ABLE TO:

LOCATE places on a map

IDENTIFY sites in the community

IDENTIFY landforms and bodies of water on maps and globes

PROVIDE a simple illustration of the impact of the physical environment on people and places being studied

CONSTRUCT a map from materials such as papier-mâché or clay

SUMMARIZE a news event with attention to place

IN CIVICS, STUDENTS WILL BE ABLE TO:

IDENTIFY national symbols such as the flag

EXPLAIN in simple terms the basic roles of the executive, legislative, and judicial branches of the government

MAKE appropriate class decisions relating to school life by orderly discussion and majority rule

RECITE and sing, with appropriate understanding, "America, the Beautiful," "The Star-Spangled Banner," "Lift Every Voice and Sing," parts of "Paul Revere's Ride," and Martin Luther King, Jr.'s speech "I Have a Dream"

IN ECONOMICS, STUDENTS WILL BE ABLE TO:

IDENTIFY the natural resources in places being studied

EXPLAIN consumers and the flexible nature of material wants in terms of everyday desires, as in visits to a candy store or toy store

EXPLAIN how producers create goods and services in response to consumer interests through activities, such as setting up a lemonade stand on a hot day

IDENTIFY costs, income, and profit in the context of activities such as the class market

PREPARE a budget for a class project

he history-social science curriculum for the Primary Academy develops students' historical and geographical literacy, their multicultural understandings, their civic knowledge and values, and their understanding of basic economic concepts. A near-to-far approach to history, geography, civics, and economics encourages students to look beyond their immediate world. This view contrasts sharply with typical social studies programs that reserve the exploration of far-away places and times for older grades.

This approach takes into account students' unprecedented access to information and events through the media. For example, they may have watched court trials on

television or seen broadcasts of presidential news conferences. The history-social science program helps them organize and make sense of this visual information.

Primary students encounter interesting people, places, cultures, and ideas through the Greats. They enter Edison's world class by using news programming to bring more of the world into the classroom and into their lives. Other new technologies, including computer-based time lines and reference materials on CD-ROM, help students discover and explore the world and its people.

PEOPLE THEY MEET INCLUDE

THEIR ANCESTORS
THE FIRST AMERICANS
THE EXPLORERS
U.S. PRESIDENTS
AMERICANS WHO MADE A DIFFERENCE
PEOPLE WHO MAKE COMMUNITIES WORK

PLACES THEY GO INCLUDE

THE AMERICAS, MEXICO
(when studying Spanish)
REGIONS OF THE UNITED STATES
THE LANDS OF THEIR ANCESTORS
COUNTRIES IN THE NEWS

Primary students are geographic explorers and historical time travelers. Much of their journey involves the literature, culture, music, and creative arts of the times and places they study. Children also see how history and the social sciences relate to the rest of the curriculum as they explore economics in math class, or geography through language arts.

History Social Science

INTRODUCES children to the institutions and symbols of American political processes and history

TAKES a near-to-far approach

CONNECTS principles to students' everyday experiences

BRINGS the world to the classroom with new technologies

ENCOURAGES students to look beyond their immediate world

DEVELOPS multicultural understanding and historical imagination

Students grasp the inherent drama of history through stories, especially those about people who have made a difference. And so we develop their historical literacy and illuminate important ideas through the lives of others and through gripping narrative. At this level, the most important sense of history that children can acquire is that it is a story well told.

Stories, songs, videos, multimedia materials, projects, visits to museums and historical sites, and explorations of the arts develop children's "historical imagination" in preparation for more formal study of history in the Elementary Academy. Students learn to imagine themselves in other times and places and to develop a multicultural understanding that goes beyond the present. In this way, they start to see themselves as part of the steadily unfolding history of our time.

Time is a difficult concept for primary students, who are apt to ask such questions as, "Did my grandmother live with the dinosaurs?" Edison students learn about time in the context of stories about people who lived in different historical periods. They pay particular attention to family history and to the lives of the senior citizens they know, as these lives represent a reasonable period of time for children to grasp. In addition, children use videos, photographs, and simulation software to get a realistic sense of the past. These activities also pave the way for the chronological study of history in the next academy.

Geography

Primary students begin to grasp the underlying principle of geographic study, that all events and processes, both human and natural, occur at a particular time and place. They learn to use maps and globes to identify places. They also learn to make and read rudimentary maps, such as maps of the classroom, the school, or the neighborhood.

Professional geographers can describe different places with passion and precision. They can explain why those places exist where they do. The young geographers of the Primary Academy also seek to explain why things are where they are and to understand the impact of place on how people live. Students develop their multicultural understanding as they explore the cultures of different countries. In addition, they learn that the Earth has changed over time and continues to do so. And they come to understand the concept of regions, such as urban and suburban or Northern and Southern hemispheres.

Students develop their multicultural understanding as they explore the cultures of different countries.

ACTIVITIES

Mapping It Out

Students in Mr. Adam's primary classroom are putting the finishing touches on a three-week intensive project. They have been studying their state and have learned about some of the resources grown and manufactured there. Part of their research involved talking with students in other parts of the state via the Edison computer network. To show what they have learned, the children have drawn their state on a large piece of poster board and are using facsimilies of corn, bread, fruits, and so on to represent the major resources of each area of the state. Today, they will label their map and decide how to explain it to the Readiness Academy children who will visit their classroom later in the week.

SURPRISE!

Local government officials are regular visitors in partnership schools. Primary students might be surprised by an impromptu visit from their mayor, who will answer their questions about what it's like to hold that office.

In all the academies, we place a strong emphasis on the civic knowledge and values that are fundamental to this country, especially freedom and equality. We do not consider it "cute" for students to misname the president or recite the Pledge of Allegiance without knowing what the words mean. By the time they reach this level, most children have seen the White House on television many times and some may have viewed courtroom trials. Primary students are ready to learn the meanings behind these places and images. Simple activities, such as putting a favorite storybook character "on trial" to illustrate the judicial system, easily present ideas in a way that primary children can understand.

We place a strong emphasis on the civic knowledge and values that are fundamental to this country.

The development of civic literacy permeates the entire program and is closely linked to the character and ethics curriculum. We introduce students to the institutions and symbols of American political processes and culture through simple exercises, such as making a decision by majority rule. The music program enhances both the language arts and the civics curriculum, as students sing songs and recite poems that have historical and civic significance.

Economics

In today's world, an understanding of economics is an important practical skill. Primary students learn basic economic concepts in the context of learning about how people lived in the past, how they live in the present, and how they are likely to live in the future. Trips to the grocery store or simple fund-raising ventures like bake sales or lemonade stands take on new meaning for children who are developing their understandings of economics in the larger world.

When taught in a straightforward manner and connected to meaningful activities, primary students can understand seemingly complex economic notions. For example, an intensive project called From Garden to Market illustrates a variety of concepts across the curriculum. Children use language and computer skills to chart the various stages involved in bringing food to consumers. They apply geography skills to illustrate where in the country certain crops are typically grown. And they apply science concepts to studying edible versus inedible plants. It's easy to see how an intensive project like this one can support learning about the economic concepts of supply and demand.

Standards for the Arts

IN MUSIC, STUDENTS WILL BE ABLE TO:

SING by heart and by using books, folk songs from many cultures, patriotic songs, and seasonal songs

DEMONSTRATE rhythm through movement, speaking, singing, and using different instruments

TAKE and repeat rhythmic dictation

PERFORM simple rhythmic patterns on unpitched instruments such as drums, triangles, and maracas

READ and play simple melodic and harmonic patterns on pitched instruments, such as xylophone, glockenspiel, or bells

DIFFERENTIATE between high and low, loud and soft, fast and slow by moving, speaking, singing, and using instruments

IDENTIFY by sound different types of music, instrumental and vocal

IDENTIFY by sound the major instruments in an orchestra

IDENTIFY musical components: whole note, full note, quarter note, and rests

RECOGNIZE and identify music from cultures and historical periods being studied

IN VISUAL ARTS, STUDENTS WILL BE ABLE TO:

USE a variety of tools and materials, such as paint, pliable wire, and paper to create a work of visual art

USE computers, cameras, and video cameras to create visual images

USE appropriate vocabulary to describe artwork and their reactions to it

EXPLAIN the use of points, lines, and colors in a painting

DESCRIBE how and which elements of art are used in their own painting

DESCRIBE different forms of visual art, such as painting and sculpture

IDENTIFY basic geometric shapes in buildings and structures

RECOGNIZE and identify visual art from cultures and historical periods being studied

IN DRAMA, STUDENTS WILL BE ABLE TO:

USE voice, gesture, and movement to convey simple characters

USE creative movements to express thoughts and to represent characters

IMPROVISE dramatic play using selected props

PARTICIPATE in the production of a play

IDENTIFY different ways to create drama, such as through video, storytelling, and puppetry

EXPLAIN why a program viewed is real or not real

RESPOND orally and in writing to dramatic performances

RECOGNIZE and identify drama from cultures and historical periods being studied

IN DANCE, STUDENTS WILL BE ABLE TO:

USE movement to demonstrate awareness of beat, tempo, and mood

FOLLOW an adult's movements to copy different dance steps, such as the five main ballet positions

USE creative movements to express thoughts and character types

RECOGNIZE different types of dance, such as ballet, tap, folk, and modern

RECOGNIZE and identify dances from cultures and historical periods being studied

Dance

rtistic literacy gives primary children another way to learn about the world. In the arts program, which is enhanced by the presence of music and arts

teachers, students learn about the arts by viewing, listening, and doing. They participate in the arts both as artists and as members of an audience.

Whether integrated with other subjects in the curriculum or taught on their own, music, visual arts, dance, and drama provide innovative ways to enhance learning and creativity. For example, tying visual arts to the study of history gives students exciting new ways to experience the spirit of the times.

The arts program goes far beyond construction-paper crafts or making circle bears on Friday to include daily experiences with music, visual arts, dance, and drama. Children develop their aesthetic appreciation of different styles and cultures and learn to view the arts critically when they take front-row seats at the outstanding performances and exhibitions that are part of the Greats. Students experience orchestral works and patriotic songs, dramatizations of familiar stories, folk dances and fairy tale ballets, portraits of historical figures, and national monuments. They also visit museums and galleries, in person or through electronic media.

Artistic literacy gives primary children another way to learn about the world.

In addition to viewing and listening to the arts, students have regular opportunities to create music, visual art, dance, and drama. They learn about music and about world cultures by singing songs in the signature singing program. They learn to play simple classroom instruments such as the recorder. They create visual images using the materials that real artists use. They explore architecture and design living and working spaces in the arts program and in the practical arts curriculum. They dance alone and in groups. And all primary students are involved in every aspect of producing a play or a video—from acting and directing to making costumes and staging the performance. In creating art, students use technology for various activities, such as composing music and making banners. And in all their arts activities, real artists and older students sometimes work with younger students to create and perform.

Every academy develops its own book of favorite songs and has its own theme song. The theme song for this academy, "The Garden Song" by David Mallet (© Cherry Lane Music Company), captures the spirit of the children's work:

Inch by inch, row by row,
Gonna make this garden grow,
Gonna mulch it deep below,
Gonna make it fertile ground

Further, having an academy theme song demonstrates the value we place on the arts and illustrates how they permeate the life of the school. Primary students learn to appreciate that the arts are valuable communication tools, as they learn the languages of music, visual art, dance, and drama.

Arts

INCLUDES daily experiences in music, visual art, drama, and dance
STRESSES viewing, listening, and doing
FEATURES a signature singing program
INTEGRATES the arts across the curriculum
PROMOTES appreciation of different cultures
TAKES full advantage of new technologies
PERMEATES the life of the school

Children begin formal studies in music at this level, through singing and playing simple instruments. Edison's signature singing program serves several purposes. Group singing provides a collaborative activity that is emotionally unifying, teaches the elements of music, develops children's vocabularies in English and in

Spanish, and gives them additional opportunities to add to their world knowledge as they perform songs about historical happenings, songs in several languages, and songs from many cultures. Furthermore, the voice is one instrument most children have.

Students also develop skills in reading music and playing instruments such as drums, tambourines, triangles, and bells in addition to the recorder, which is a wonderful first instrument. Children develop a more sophisticated understanding of rhythm, melody, and form—the raw material of music. And as they participate in movement activities, they reinforce their awareness of beat, tempo, and mood.

In this academy, children experience many types of music, including opera, chamber, folk, ethnic, and band music. And as they explore music from different parts of this country and from around the world, they begin to understand that music is a powerful medium of cultural expression.

CINDERELLA BY PROKOFIEV
2-PART INVENTION IN A MINOR BY BACH
MARCH FROM AÏDA BY VERDI
"AMAZING GRACE" BY JOHN NEWTON
"CRANES IN THEIR NEST" (TRADITIONAL, JAPAN)
C MAJOR SONATA BY MOZART
NUTCRACKER SUITE BY TCHAIKOVSKY
PETER AND THE WOLF BY PROKOFIEV
"THE STARS AND STRIPES FOREVER" BY SOUSA
"FLIGHT OF THE BUMBLE BEE"
BY RIMSKY-KORSAKOV
"EL CASCABEL" (TRADITIONAL, MEXICO)
"NIGHT CHANT" (NAVAJO, NORTH AMERICA)

"THE GARDEN SONG"
"DON'T YOU PUSH ME DOWN"
"THE BIG-EYED RABBIT"
"WE-UM"
"SUR LE PONT D'AVIGNON"
"THE LITTLE SEED"
"THE SONG OF KUK-OOK, THE BAD BOY"
"TINGALAYO"
"ALMONDS AND RAISINS"

In the Primary Academy, children begin to recognize art styles through exposure to the many wonderful prints that are part of the Greats and are presented in a variety of formats. The Impressionist painters Monet and van Gogh are particular favorites, whose paintings of flowers and gardens are as interesting to the children as their own gardening experiences.

Students draw on observation, play, imagination, and their own thoughts to create more mature artwork in this academy. They develop their skills in using a variety of art tools and materials available in the Collaboratory and they learn how to use different media to express different ideas. Students also learn about the elements and principles of art, which gives them a new vocabulary with which to talk about their developing skills.

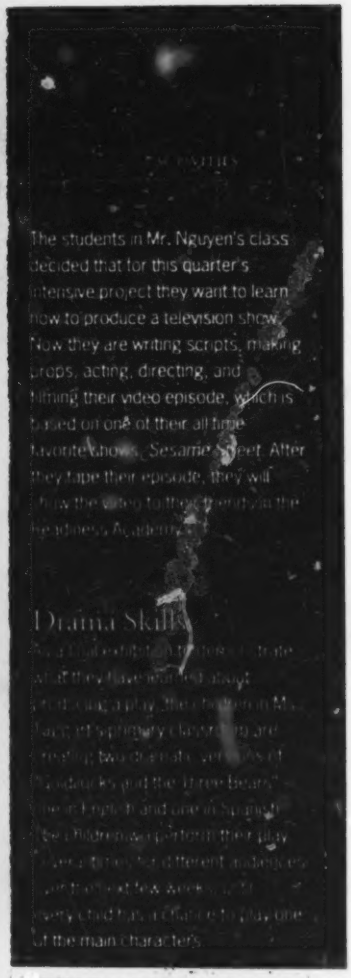
Students identify, interpret, discuss, and respond to their own work and the work of classmates and professional artists. In the process, they develop their understanding of visual art as a medium for exploring people and cultures. Students also begin to recognize and respond to different types of architecture and to relate their growing knowledge of geometric shapes to exploring the buildings and structures around them.

Drama

Children get many of their ideas about drama from television, usually from situation comedies. Our approach to drama helps them develop a broader sense of the possibilities—from a single person performing a monologue to an entire cast performing a play with sets and costumes. As children participate in creating drama, they begin to understand how the programs they watch are actually produced and they gain a deeper understanding of the difference between fantasy and reality.

As children participate in creating drama, they gain a deeper understanding of the difference between fantasy and reality.

Opportunities for making and performing drama abound in literature, in everyday experiences, and in children's own powerful imaginations. They express their feelings, thoughts, and imaginations through dramatic play, puppetry, and storytelling. They role-play familiar situations, improvise using selected props, and dramatize known stories and rhymes. They also participate in all aspects of producing a play—acting, directing, staging, making costumes, constructing sets in the Collaboratory, and finally, presenting their work to an audience.


The students in Mr. Nguyen's class decided that for this quarter's intensive project they want to learn how to produce a television show. Now they are writing scripts, making props, acting, directing, and filming their video episode, which is based on one of their all-time favorite shows, Sesame Street. After they tape their episode, they will show the video to the rest of the students in the Academy.
Drama Skills

MUSICAL PERFORMANCES
Aladdin
Anansi Rides Tiger from Africa
East of the Sun and West of the Moon
James and the Giant Peach
Peter and the Wolf
Pinocchio
Sleeping Beauty
The Little Mermaid
Beethoven's Symphony No. 6
Prokofiev's Cinderella
Schumann's Symphony No. 1

Students also learn to recognize the basic elements of drama, such as character and dialogue. Their response to dramatic performances grows more sophisticated as they become more discerning viewers and are able to give reasons for what they like and don't like. Students begin to recognize that drama exists for lots of different purposes.

Students in the Primary Academy begin to understand that dance is a form of communication found in many cultures. Through simple creative movement exercises, they learn that they can move their bodies in different ways to convey a range of thoughts and feelings. For example, they discover that dancing can depict characters or tell stories of different peoples. Children also have regular opportunities to learn and participate in simple ethnic and folk dances. In this way, they begin to see that all dance has a cultural and historical context.

In keeping with the Greats, students view many performances by national and local dance companies, live or on video. They experience diverse styles and genres of dance, such as tribal, folk/ethnic, ballet, modern, tap, theatrical, and jazz. Students are introduced to the elements of dance and learn to recognize those elements in the performances they view. They learn some of the special vocabulary of dance and begin to use those words as they respond to performances.

Students also begin to understand the process of creating dance and to explore the special role of the choreographer in this process. Before leaving the Primary Academy, every child gets the chance to choreograph a brief dance and "teach" it to classmates.

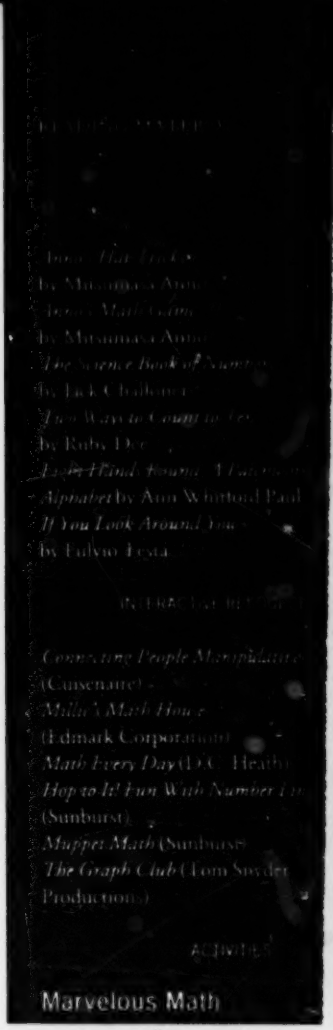
Mathematics
Science

Standards for Mathematics

IN MATHEMATICS, STUDENTS WILL BE ABLE TO:

- DEMONSTRATE number sense, or intuition about numbers large and small
- UNDERSTAND the numeration system to 1,000 by relating counting, ordering, grouping, and place-value concepts
- PERFORM addition and subtraction using numbers through the 100s and apply the concepts of addition (joining) and subtraction (taking apart)
- PERFORM multiplication through 5 x 5, applying multiplication concepts (repeated addition)
- RECOGNIZE numbers equally divisible by 2, 5, and 10
- DEMONSTRATE recall of addition and subtraction facts to 18
- COUNT forward and backward by 2s, 5s, and 10s
- WRITE and solve story problems that involve simple fractions (halves, thirds, and fourths)
- RECOGNIZE, describe, and extend a variety of patterns; use patterns and relationships to explain and analyze mathematical situations
- COMMUNICATE and clarify thinking about mathematical ideas using bar graphs, charts, writing, and everyday language
- RECOGNIZE, describe, model, and classify simple plane and solid shapes and models; describe meanings of side, angle, perimeter, and area
- USE measurement to solve problems and in everyday situations to determine length, capacity, weight, volume, time, and temperature
- ESTIMATE probability of outcomes in simple coin-toss game
- COLLECT and organize data, represent the data collected, and make predictions using the data
- COUNT and recognize mixed coins and paper currency; give and check correct change; use decimal notation for recording money
- USE estimation in working with quantities, measurement, computation, and problem solving; judge the reasonableness of solutions
- USE a variety of strategies to solve real-world problems
- EXPLAIN orally and in writing, sometimes working in groups, how a problem was solved and justify the answer

Students in the Primary Academy acquire another important skill for exploring and making sense of the world—mathematical literacy, or numeracy. In fact, problem solving forms the cornerstone of the math curriculum. Through hands-on activities, such as planning the school garden and working with computers and a variety of manipulatives, they apply and test their mathematical ideas and understandings. They learn to make comparisons, such as, "How long is the chalkboard?" "How large is the radish garden?" and "Can you run faster than you can walk?" They use many different technologies, such as calculators, in their investigations. They explore a range of mathematical possibilities in their environment and come to appreciate the power and beauty of mathematics—and their own power to use math in meaningful ways. This introduction ensures that students go through life confident in mathematics and capable of applying it to their daily lives.



Here are some of the math activities that children in the Primary Academy enjoy: PRACTICE reading and writing numbers by making personalized phone books, listing the names and home phone numbers of all children in the class

Students learn useful math facts and to compute with speed and accuracy. In fact, it is not unusual to see primary children delighting in timed tests of math facts, in which they strive to beat their own personal best. They also learn to apply addition, subtraction, multiplication, and division to real-life problems and situations. For example, they might calculate how many students are absent on a given day or determine how many more days remain until the next vacation. No matter what the nature of their calculations, students learn to know when it is best to use paper and pencil, a calculator, or mental math. They also frequently use mathematics in connection with other subjects, such as exploring the height of mountains in geography or inventorying books in the classroom library during language arts.

During the Primary Academy, children work in pairs and in groups to make mathematical discoveries, develop mental math skills, explore relationships, and strengthen their thinking. They meet at the classroom calendar each morning to share their thoughts and discoveries about data they collect daily. They also record the results of their mathematical investigations and games, maintain written project summaries, and jot down general thoughts about mathematics in their notebooks every day. This is the start of being able to express the principles of mathematics, math problems, and their answers in simple, clear language.

Math

VALUES students' mathematical thinking
PROMOTES problem solving
IS RICH in manipulatives and other hands-on materials
ENCOURAGES talking and writing about math
EXPECTS fluency with numbers and operations

IN SCIENCE, STUDENTS WILL BE ABLE TO:

ACQUIRE and use appropriate knowledge to make sense of the natural and human-made world, such as using knowledge of the characteristics of life to distinguish living and nonliving things

RECOGNIZE and describe simple patterns and generalizations about aspects of the natural world, such as that living things grow and change

PROPOSE possible explanations of natural phenomena or technological developments, such as why rain puddles disappear

PERFORM simple hands-on investigations, such as observing and recording the temperature outside at the same time every day

APPLY science process skills, such as observing, sorting, measuring, predicting, and communicating results, in their thinking and exploring

APPLY scientific facts and ways of thinking to solve everyday problems, such as how to keep weeds from growing in the garden

APPLY appropriate arithmetic operations, such as counting, measuring, adding, and subtracting, in conducting their investigations

DEMONSTRATE the beginning of scientific attitudes, appreciations, and dispositions in seeking knowledge about the natural world (genuine scientific curiosity, appreciation of the natural world, and cooperation in answering questions)

Why does the sky change colors? Why do polar bears live near the North Pole? Young students have an insatiable curiosity about the world around

them. In the Primary Academy, they build on that curiosity as they experience and inquire into the nature of their world. In the process, they begin to develop scientific literacy—the knowledge that citizens should have in order to understand the meaning and importance of new scientific findings, improving technology, and science-related issues that face society. This is a vibrant and vital literacy that sparks students' interest in, enjoyment of, and interaction with the natural world and promotes the confidence that comes with understanding.

Reading Materials

Is This a Baby Dinosaur? And Other Science Picture Puzzles by Millicent E. Selsam
The Visual Dictionary of Plants from Dorling Kindersley, Inc.

MULTIMEDIA SCIENCE RESOURCES
Growing, Growing (Churchill Film)
GrowLab (National Gardening Association)
Science Discovery Elementary (VideoDiscovery)
3-2-1 Contact: Wild Things (Sunburst/Wings for Learning)
Resources for Hands-on Activities
Growing Things (EDC)
SuperScience Magazine (Scholastic)
Life Lab (VideoDiscovery)

Science

Students in the Primary Academy spend their time as scientists do—exploring, discovering, inventing, analyzing, and testing through hands-on experiences and investigations. Their explorations reflect the interests of children of this age and span the fields of science, as they discover chemistry in the kitchen, physics in the gymnasium, biology in the garden, and earth science in their local weather and climate.

ACTIVITIES

Science Sampler

Here is a sampling of hands-on science investigations:
IDENTIFYING three-dimensional objects from their projections in a shadow box
DESCRIBING colors, sizes, and shapes of different leaves from plants in the garden and the woods
EXAMINING fingerprints with a hand lens to observe similarities and differences
USING the computer to record, chart, and write observations from their weather station, developed during a four-week intensive

THE AREAS OF STUDY FOR THIS LEVEL REFLECT THE INTERESTS OF PRIMARY STUDENTS

Care and treatment of plants and domesticated animals
Understanding and taking care of the human body
Basic weather patterns, temperature, and forms of precipitation
Earth, moon, sun, seasons, climate
Prehistoric life on Earth
Pushes and pulls
Solids, liquids, gases
Heat, light, sound, electricity
The science of everyday things in nature and the home
Stories of scientists (Edison, Curie, Drew)
Science in the news

The beginning scientist in the Primary Academy experiences the natural world through a combination of hands-on activities, computer simulations and data collection, and experiences with other multiple-media resources. For example, in tending the academy garden, students analyze soil content before planting. They read about garden plants in appropriate magazines and books. They observe and record plant growth in their gardening journals and use video cameras and the computer to chart growth patterns over time. In performing such activities, students begin to develop the habits of mind and process skills used by all scientists—observing, inferring, classifying, measuring, predicting, and communicating results. Students learn science by doing science and come to understand that scientists are people like themselves who ask questions and look for answers, using a variety of simple and more complex procedures.

Whether working in the garden, the lab, or the classroom, students have access to a range of appropriate science equipment, such as binoculars and tuning forks, and come to view computer and video technologies as important and indispensable tools for doing science.

The Edison Environment

for Science

BUILDS on and reflects the interests of primary students

CENTERS on hands-on experiences and investigations

EMPHASIZES science process skills and data collection

TAKES full advantage of new technologies and equipment

Character and Ethics

IN CHARACTER AND ETHICS, STUDENTS WILL BE ABLE TO:

SHOW respect for others by listening to their ideas and using respectful language, proper manners, and other appropriate behaviors

EXPLAIN the moral of a story

REPORT orally or in writing on a real-life hero

WORK with others in a way that is fair and honest

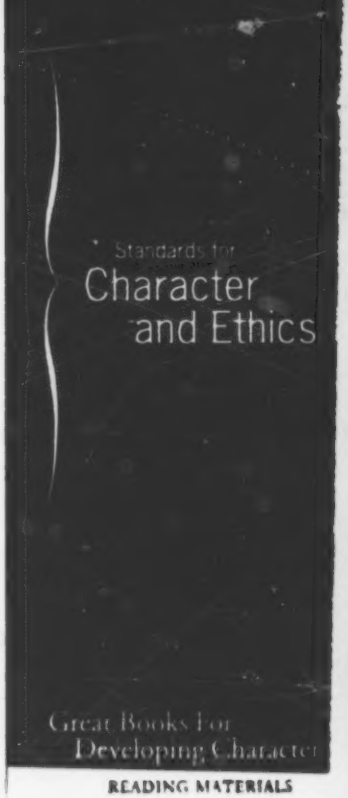
ACCOMPLISH tasks and assignments with diligence

CARRY out their responsibilities to the class and school community, especially assisting in keeping the areas clean and tending the garden

DEMONSTRATE self-reliance in taking care of personal belongings and staying organized

OBSERVE rules in activities and games

Young children have a strong desire to do what is right. In the Primary Academy, we emphasize character traits and values such as respect for others, responsibility, fairness, honesty, and diligence. The student standards in this area focus on behaviors that are appropriate to interactions with each other and with adults. Edison schools work closely with families to create an environment that fosters ethical literacy. Our approach respects parents' primary role in this area and is compatible with a variety of viewpoints.



READING MATERIALS

Aesop's Fables, retold by Russell Ash and Bernard Higton
Why Frog and Snake Never Play Together, an African folktale
The Little Match Girl by Hans Christian Andersen
A Drop of Honey by Djemma Bider
Mike Mulligan and His Steam Shovel by Virginia L. Burton
It's George! by Miriam Cohen
John Henry: An American Legend by Ezra Jack Keats
The Little Engine That Could by Watty Piper
Thy Friend, Obadiah, by Brinton Turkle
So Far from the Bamboo Grove by Yoko K. Watkins

Children develop character and learn ethical behaviors best by following the examples of others, by discussing the lives of heroic individuals, by identifying "the moral of the story," and by developing sound habits. This kind of learning occurs throughout the curriculum. While studying history, for example, children discuss acts of heroism and villainy by historical figures. During physical education, they discuss what it means to be a "good sport." And when reading aloud to students and teaching them to read, we pay special attention to stories with ethical themes. The Greats for this level include many works with themes related to character and ethics. This emphasis on reading about and discussing heroic individuals from history and contemporary life helps counter the often unrealistic images of heroes children get from cartoons and popular culture.

We emphasize character traits and values such as respect for others, responsibility, fairness, honesty, and diligence.

Children at this stage of development begin to take satisfaction from accomplishing interesting and challenging school tasks. For example, they diligently revise and rework individual assignments and long-term projects in order to see their best work placed in their portfolios. They also work in groups, enjoying social interaction and learning how to cooperate in order to accomplish tasks that are too difficult or complex to do alone.

Because they are part of the classroom community, students take responsibility for keeping learning spaces clean and organized so that all can do their best work. And

individually, students take increasing responsibility for doing their work on time and in an organized manner.

Fairness is very important to primary students, who are often heard exclaiming "that's not fair!" in the context of their everyday experiences. Being fair at this age often means taking turns, sharing materials, and following the rules. Respect for others is fundamental to all interactions among primary students. At this early age, they learn to respect others as individuals despite differences of appearance. They learn that it is not appropriate to make judgments about people based on appearances.

Attention to ceremony is another important part of the character and ethics program at this level. We hold special events to recognize achievement in all areas. We open our school year as they do the Olympics—with a ceremony. Special ceremonies in the Primary Academy surround achieving the competence required to receive a home computer and demonstrating certain academic skills. In addition, children participate in regular activities such as group sing-alongs and the morning meeting.

Just as students' reading, music, and bike-riding skills get stronger with practice, so do their ethical and responsible behaviors. In the Primary Academy, students have many opportunities to practice responsibility, self-reliance, respect for others, and other desirable traits and behaviors.

Character and Ethics

RESPECTS parents' primary role

EMPHASIZES ceremony and ritual

PROMOTES diligence, responsibility, fairness, and self-reliance

BEST COPY AVAILABLE

Physical Fitness and Health

IN PHYSICAL FITNESS AND HEALTH, STUDENTS WILL BE ABLE TO:

DEMONSTRATE competence in games and activities that involve locomotion (skipping, hopping, chasing, fleeing), nonlocomotion (balancing, forward and backward somersaults), and object manipulation (throwing, kicking, catching, or paddling a ball)

PREPARE a personal fitness plan that includes adequate time for practicing healthful habits and provides examples of exercises they can do on their own

IDENTIFY changes in the body as a result of physical activity (increased heart rate and pulse) and provide a basic explanation of how the cardiovascular system works, using illustrations or models

UNDERSTAND and apply the principles of street safety and follow basic safety procedures while biking, skating, swimming, and using sporting and fitness equipment and apparatus

PLAN a week of healthful menus and snacks that demonstrate understanding of diet and nutrition

DEMONSTRATE appropriate skills for resisting drugs, alcohol, and tobacco

Standards for
Physical Fitne and Health

The road toward a lifetime of healthful habits begins in the Primary Academy with the personal fitness plans that each student helps to design and carry out with guidance from the physical education teacher. Students evaluate, add to, and modify these plans each year, on through the Collegiate Academy.

READING MATERIALS

BOOKS FOR KEEPING HEALTHY AND FIT

The Skeleton Inside You by Philip Balestrino

Germs Make Me Sick! by Melvin Berger

The Senses by Angela Royston and Edwina Riddell

Arnold's Fitness for Kids by Arnold Schwarzenegger with Charles Gaines

Look at Your Eyes by Paul Showers

The students in Ms. Reilly's physical education class have been practicing locomotor movements. To demonstrate their new skills, they will make individual videos, in which they teach four different movements—walking, galloping, hopping, and running—to a classmate. They practice their sequences, then memorize and videotape them, with the help of their teacher and parent volunteers. Ms. Reilly reviews and evaluates the videotapes before storing them in the students' portfolios. Of course, all students have opportunities to watch their classmates on tape.

HEART SMARTS

Seven-year-old Laney straps on her individual heart monitor. This simple piece of technology is programmed to monitor Laney's heart throughout the fitness class that's about to begin. Today Laney's physical education teacher will evaluate her ability to read and interpret the information on her heart monitor and to adjust her activity levels as necessary during the class. For example, if Laney's heart rate doesn't rise to the target level, she should know to increase the rate of her activity. After class, Laney turns in her monitor at the heart monitor station. With the help of a student from the Junior Academy, Laney prints out and documents a recording of her varying heart rates.

Children in the Primary Academy begin a steady, but less dramatic period of growth than they experienced in early childhood. They grow taller and heavier and make significant advances in balance, agility, coordination, power, and speed. In the area of physical fitness, the emphasis at this level is on developing motor skills and aerobic capacity, targeted to individual levels and according to personal fitness plans. Learning basic motor skills provides the competence that leads to confidence and enjoyment of physical activity for a lifetime.

Learning basic motor skills provides the competence that leads to confidence and enjoyment of physical activity for a lifetime.

Students participate in physical education classes every day for one hour. They learn to link movement patterns to perform simple sequences such as running, jumping, skipping, and galloping, and to control movements to achieve different speeds, directions, and levels of activity. They play using balls, bats, hoops, jump ropes, benches, mats, and other equipment individually or in small groups. They also participate in group sports, such as soccer and T-ball, and learn to observe rules and regulations. The quality and quantity of the physical education program are due in large part to the presence of the specialist.

Health

The nutrition program at this level stresses making healthful choices among the food groups, with special attention to heart-smart eating. Students work with administrators and food-service personnel to design a menu of meals and snacks. Does this mean they will never eat a gingerbread cookie? No, but we will encourage them to make healthful food choices whenever possible.

In the area of personal safety, a special program called Street Safety teaches children how to stay safe in their immediate environment and reinforces some of the basic safety skills most families teach at home: Don't talk to strangers. Don't accept candy or other foods from people you don't know. Never get into a car with a stranger. Look both ways before crossing the street. Wear a helmet when biking. While we do not want children to be overly fearful, we do want them to be careful and aware of risks in their immediate environment.

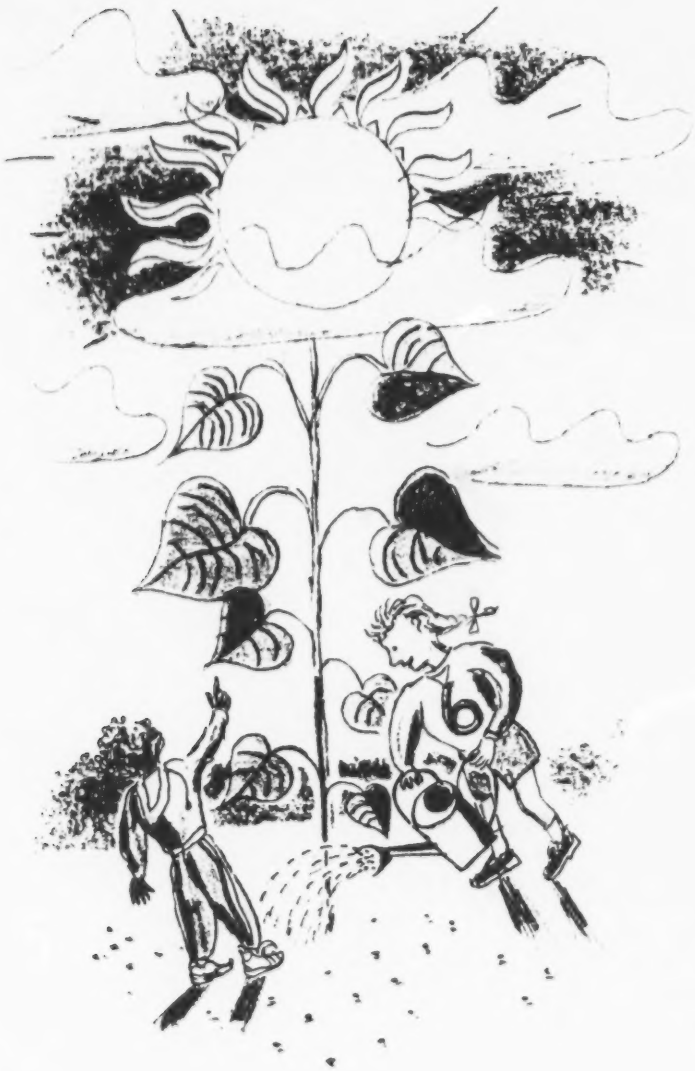
The Street Safety program also handles other tough issues such as avoiding dangerous substances and teaches resistance skills children may use if offered drugs, alcohol, or tobacco. Students learn how to keep safe in the water and when using the physical fitness equipment and apparatus at school.

The health program, which relates closely to the character and ethics and practical arts programs, helps children take care of themselves by giving them opportunities to practice proper dental care and strategies for stopping the spread of germs.

Physical Fitness and Health

PROMOTES physical activity and healthful habits for a lifetime
EMPHASIZES motor skills and aerobic capacity
TEACHES healthful food choices
OFFERS strategies for staying safe in school, at home, and on the streets
STRESSES hygiene

Athletes from the Senior and Collegiate academies often drop in on primary physical education classes to demonstrate their skills in different games and sports. These unannounced demonstrations motivate the younger children to keep fit and to work toward concrete goals.



Standards for

Practical Arts and Skills

IN PRACTICAL ARTS AND SKILLS, STUDENTS WILL BE ABLE TO:

LIST and test ideas for solving a problem, such as how to organize the classroom so everyone can see the presentation or station

USE a variety of print and media resources to access information, write a brief report, and complete a project

TURN computer on and off, load and run software, use menus, and demonstrate basic keyboarding, mouse, and word processing skills

WRITE a short work plan for completing a project and choose appropriate materials for completing it

PRINT or write clearly in a style of choice

TELL time and maintain personal calendars and schedules

DEMONSTRATE an understanding of systems, by explaining, for example, how the parts of a skateboard work

USE appropriate manners when working, playing, and eating

PREPARE soil, plant seeds, weed and fertilize growing plants, cut flowers, and harvest vegetables from the school garden

Standards for
Practical Arts and Skills

Children in the Primary Academy have many years of schooling ahead of them, but they can acquire certain skills that will pave the way toward confident and competent adult living and readiness for work. Designing and making things, working in teams, using computers, and dining

READING MATERIALS

Great Books About Making Things

Do Not Touch by Lark Carrier
Tool Book by Gail Gibbons
How to Make Super Pop-Ups by Joan Irvine
In My Garden: A Child's Gardening Book by Helen and Kelly Oechsli
The Toolbox by Anne Rockwell
Fun with Paper by Robyn Supraner

with good manners are just a few of the real-life skills students will begin to develop and will use throughout their lifetimes.

The practical arts program is linked to every subject area. For example, children apply basic gardening techniques as they explore how living things grow and change during science projects. They use beginning measurement skills when exploring the math required to build simple structures. As they report on books they read, they practice the real-world skills of gathering and communicating information. In the physical fitness program, children learn to stay healthy and safe in the classroom, at home, on the road, and in the water. And multiage cooperative-learning activities in all areas of the curriculum help children learn to share materials, take turns, and get along with others—all skills that prepare them for eventual participation in adult work teams.

Students in the Primary Academy begin to show self-reliance and are ready to acquire the skills they will use throughout their lives. These include using simple materials like pencils and pens, beginning study skills, and techniques for managing time and resources. Students are ready to operate a computer, to improve their penmanship, to tell time, to maintain personal calendars and schedules, and to keep their learning materials neat and organized. They also learn the basic hygiene they need to care for themselves and begin to experience caring for other living things such as the plants in the academy garden.

Two practical arts that receive special emphasis are designing and using technology. Whether students are constructing a tower in the Collaboratory, or devising a plan for keeping pests out of the garden, they use design skills. They formulate goals, plan

SAMPLE ASSESSMENTS

To demonstrate their problem-solving and design skills, primary students draw a new floor plan for their classroom. Before drawing their plans, the children interview their classmates to determine the main problems with the present layout, such as poor access to art supplies or limited views of the chalkboard. Then they draw floor plans to eliminate at least two of those problems and present their plans to the class for feedback and criticism. After their teacher evaluates their final plans, she scans them into the children's electronic portfolios. Later, the class actually tries the new plans to determine which ones work best.

PROBLEM SOLVING

Second-graders Jaime, Jamal, and Sara Beth sit at a table in one corner of their classroom. Between them on the table are 25 marshmallows, 5 red gumdrops, and 50 toothpicks. Their task is to put all the materials together to make a structure. The only rules are that they must use all the materials and they must be able to explain their structure when they finish. After about an hour, the children have constructed a radio tower with gumdrops on top that actually look like lights. They explain their structure to the class, then snap a few photographs for their portfolios.

creatively to realize those goals, and assess the degree to which they succeed. This constructive way of thinking about problems and products, which is vital to success in school and in life, runs throughout the academies.

Edison's distinctive design curriculum is called the KID program:

KNOWLEDGE WHAT YOU KNOW

INQUIRY HOW YOU KNOW IT

DESIGN WHAT YOU CAN CREATE OR BUILD WITH WHAT YOU KNOW

When students use the habits of mind developed by the KID program, they put their ideas about the world into action and develop the self-determination needed to see a project through to completion. They also develop their own individual standards for craftsmanship as they design and build products and invention.

Students in the Primary Academy also begin to develop technology skills. They start by learning how to turn the computer on and off, load and run software, and use menus. Keyboarding, mouse, and word-processing skills also begin now, and students develop their proficiency as they use computers in all the subject areas. When they have acquired these skills, they are ready to receive their home computers.

The Edison Environment

Practical Arts and Skills

PROMOTES real-life skills

PAVES the way toward readiness for work

CONNECTS to every subject area

EMPHASIZES design and technology skills

Ensuring Student Success

ll students in the Edison program will read and write with confidence and competence by the time they leave the Primary Academy. As one of the concluding assessments, students choose a passage from a book to read aloud to a group consisting of their peers, teachers, and parents. Each child must explain what the passage means and how it connects with one of the themes studied during the year. The audience asks questions about the passage, and the entire performance is videotaped. This task is deliberately structured to integrate learning while focusing on reading as an essential qualification for moving on to the next academy. The following vignette illustrates how one teacher evaluates this assessment and how she enlists parents, students, and colleagues in guaranteeing her students' reading success.

Assessment in Action

It's almost time for the end-of-year review in the Primary Academy, and the teachers have divided their students' portfolios into groups of 20. Each teacher reviews a group and discusses the portfolios with the other two teachers before moving on to another group.

Two teachers are seated comfortably in their own homes, at their own computers, while another teacher is still at school. They're talking to one another via Edison's electronic network, and their conversation unfolds on the screens in front of them.

Mrs. Greene wants to make a point about the quality of one student's product. She's referring to a video clip of Ashley's recent attempt to read a passage aloud, which she and the other teachers watched at school that morning. Mrs. Greene mentions the consistent pattern of mistakes that Ashley made and asks her colleagues if they agree with her on a gently worded recommendation to the child and her parents. She wants to make it clear that Ashley needs further work and help during her final month in the academy. The others work with her on the statement, suggesting changes until all three are happy. Then Mrs. Greene enters it into Ashley's electronic portfolio.

All students will read and write with competence and confidence by the time they leave the Primary Academy.

Later, Mrs. Greene writes an E-mail message to Ashley's parents and asks them to download the file so that they can see the recommendation and respond to it. The next day, Mrs. Greene explains to Ashley what she has said to her parents. Together, Mrs. Green and Ashley look at the original videotape of her reading. Mrs. Greene explains the problems she sees and suggests how she and Ashley will work together toward improvement over the next month.

The disk containing Ashley's electronic portfolio will accompany her throughout her Edison school career. Mrs. Greene wants to make Ashley's record useful to the teachers who will work with her next in the Elementary Academy, and also helpful to Ashley herself, who will use the portfolio to reflect on her own growth. Of course, this

disk is not the only item used to decide whether Ashley is ready to move on to the next academy, but it is an important part of her overall evaluation and provides a clear record of her growth and development.

High standards, state-of-the-art technology, ongoing assessment, and regular communication between school and home ensure that Ashley and all other students like her get the support they need. But the Edison edge really comes down to the talent and creativity of local teachers and principals in partnership schools. After all, it's teachers who create a joyful atmosphere for learning and develop inspiring, well-crafted lessons.

Edison understands that teachers who are supported by principals acting as instructional leaders are vital to the success of partnership schools. And nothing is more critical to the quality of their work than training and support. In the Edison system, that support comes in the form of extensive professional development, state-of-the-art technology, and regular opportunities for collaboration and teamwork. In addition, we provide model lessons and assessments to guide teachers as they develop their own.

Working in concert with our public school partners, we believe that we can provide all students, regardless of economic or social circumstances, with an education that is rooted in democratic values, that is academically excellent, and that prepares them for productive lives.

The Edison edge comes down to the talent and creativity of local teachers and principals in partnership schools.

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Martha Abbott
Foreign Language Coordinator
Fairfax County, VA

Ann Aviles
Elementary Music Teacher
Brooklyn, NY

Mary Bicouvaris
Secondary Teacher
Newport News, VA

John Bishop
Professor, Cornell University
Ithaca, NY

Peter C. Bruce
Director of Resampling Project,
College of Business,
University of Maryland
College Park, MD

Charles Burnette
Professor, The University
of the Arts
Philadelphia, PA

Dan Chernow
Vice President and Assist. to
General Manager, Pacific Theatres
Los Angeles, CA

Bruce Cole
Distinguished Professor of Fine Arts
Indiana University
Bloomington, IN

Wendy Haynes Connor
Secondary Teacher
Hampton, VA

Eric Cooper
Assoc. Professor, Teachers
College at Columbia University,
Exec. Director of
National Urban Alliance
New York, NY

Jim Corry
Director, Corporate Wellness and
Fitness Services, Metropolitan Life
New York, NY

Linda Davis
Deputy Superintendent, San
Francisco Unified School District
Oakland, CA

George Demko
Professor, Dartmouth College
Hanover, NH

Byron Dobell
Former Editor-in-Chief, American
Heritage Magazine
New York, NY

Kendra Ettenhofer
Secondary Teacher
Colorado Springs, CO

Bill Fauver
Secondary Teacher
Manhattan Beach, CA

Curtis Finch
Professor and Director, Virginia
Tech Site, National Center for
Research in Vocational Education
Blacksburg, VA

Geno Flores
Secondary Teacher
Oceano, CA

Roy A. Gallant
Professor, University of
Southern Maine
Rangeley, ME

Jeff Galloway
U.S. Olympian; Pres. Phidippides;
CEO Galloway Productions
Atlanta, GA

Carolyn Gecan
Secondary Teacher
Fairfax County, VA

Ed Gero
Actor, Shakespeare Company,
Director of the Ensemble,
George Mason University
Washington, DC

Bernadette Glaze
Secondary Teacher
Fairfax County, VA

Donald Goldsmith
President, Interstellar Media
Berkeley, CA

George Graham
Professor, Virginia Tech
Blacksburg, VA

Peter Greer
Principal, Monclair
Kimberly Academy
Montclair, NJ

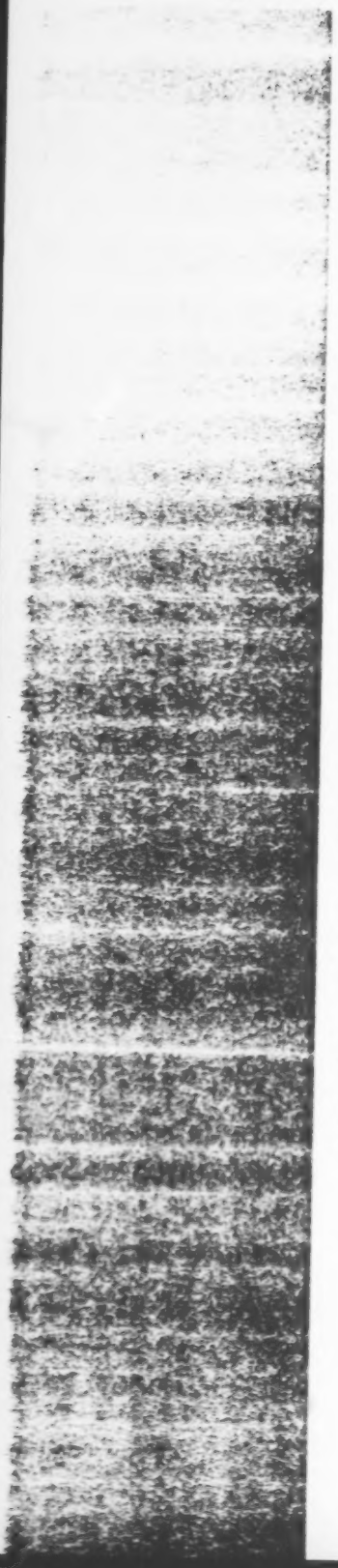
Charles D. Haynes
Executive Director, First Liberty
Institute
Manassas, VA

Bill Honig
Professor, San Francisco State
University
San Francisco, CA

Yvonne Johnson
Assistant Superintendent for
Instruction, Hayward
Unified School District
Hayward, CA

Bob Jones
Executive Vice President
National Alliance of Business
Washington, DC

Patsy Kanter
Math Coordinator
New Orleans, LA



Tayeko Kaufman
Science Coordinator
Kentfield, CA

Patricia A. Keegan
Visual Arts Teacher/Consultant
Bethlehem, CT

Beth Kirkpatrick
Emens Distinguished Professor,
Ball State University, Muncie, IN.
Middle School Teacher
Vinton, IA

Judith B. Krauss
Dean and Professor, Yale
University School of Nursing
New Haven, CT

Richard Lambert
Director Emeritus, National
Foreign Language Center
Barnegat Light, NJ

Leanna Landsmann
President, Leanna Landsmann Inc.
New York, NY

Mary Laycock
Mathematics Specialist
and Consultant,
Nueva Center for Learning,
Hillsborough, CA

Maria Lopez-Freeman
Chairperson, California
Curriculum Commission
Montery Park, CA

Peter Edward Lowe
Professional Product Designer
New York, NY

Bruno V. Manno
The Hudson Institute
Washington, DC

Jerry L. Martin
Senior Visiting Scholar
Georgetown University
Washington, DC

Claude Mayberry
President and CEO
Science Weekly
Rockville, MD

Myriam Met
Foreign Language Coordinator
Montgomery County, MD

Ruth Mitchell
Education Policy Analyst
Washington, DC

Susan Munroe
Education Consultant
Washington, DC

Kevin Padian
Professor, University of
California at Berkeley
Berkeley, CA

Joan Peterson
Consultant, Visual and
Performing Arts,
California Department
of Education,
Sacramento, CA

Diane Ravitch
Visiting Fellow
The Brookings Institution
Washington, DC

Pleasant T. Rowland
President, Pleasant Company
Middleton, WI

Dorothy A. Straub
President, Music
Educators National Conference,
Music Coordinator,
Fairfield Public Schools
Fairfield, CT

Barbara Takashima
Consultant, San Diego
Field Test Network
San Diego Unified School District
San Diego, CA

Steven S. Tigner
Professor Emeritus of Philosophy,
University of Toledo, Adjunct
Professor of Philosophy and
Education, Boston University
Toledo, OH

David Vigilante
Secondary Teacher
San Diego, CA

Thomas G. Walton
Teacher of Health-Related Fitness
Contoocook, NH

Marilyn Whirry
Secondary Teacher, Consultant
Manhattan Beach, CA

Clifford Winston
Economist, The Brookings
Institution
Washington, DC

Edward Wynne
Professor, College of Education,
University of Illinois
Chicago, IL

Judith Young
Executive Director, National
Association for Sport and Physical
Education
Reston, VA

The following members of The Edison Project Curriculum Development Staff had primary responsibility for this publication:

Francie Alexander
John Chubb
Nicki Granata
Nancy Hechinger
Peter Kelman
Debra Martorelli
Ted Rebarber
Annette Tauber

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We invite your questions and comments about The Edison Project. Please contact us at

The Edison Project
529 Fifth Avenue, 12th Floor
New York, NY 10017

Or call 212-309-1600
(fax 212-309-1604)